TORREYA

May, 1914.

Vol. 14 No. 5

A PRELIMINARY LIST OF THE LICHENS FOUND WITHIN A RADIUS OF 100 MILES OF NEW YORK CITY.

By George C. Wood

Some ten years ago the writer pursued the study of lichens with a view to becoming familiar with those forms in the neighborhood of New York City. A partial list was brought together as a result of many excursions and presented to the New York Botanical Garden as part of a work towards an advanced degree in science. The list was lost for some years and but recently found among the effects of Professor Lucien M. Underwood, then in charge of advanced work at the garden.

It was thought advisable to publish the list as a beginning of a possible future complete survey of the district, particularly with a view to its adding some forms to the Long Island biological survey, which is being conducted under the auspices of the Brooklyn Institute of Arts and Sciences. But the nomenclature used in the completion of the list was that of Tuckerman. The Engler and Prantl system has since partially superseded it and it was thought best to arrange it so that it would meet the new requirements.*

* The following order follows largely the classification set forth by the l'Abbe Hue, which is based upon thalline structure. This order does not differ greatly in results from that adapted by Dr. Zahlbruckner in Engler and Prantl, except in a few notable instances, though the latter's is developed upon phylogenetic principles. That lichens are the result of a peculiar parasitic or saprophytic relation between a fungal mycelium and an algal host seems a well established fact, but that the lichen as a distinct organism has undergone a well marked evolutionary development, is also very evident. Therefore to adopt a classification for them as they are, and not because of their origin, is to me the logical course. We have as yet no proof of the synthetic formation of lichens *in nature*. Lichens arise from preëxisting lichens and thus probably reproduce only by soredia and fragmentation. Protophytic characters are not necessarily to be employed if we wish to adopt a natural classification. In rearranging the nomenclature I have had the aid in several instances by Dr. H. E. Hasse.

R. Heber Howe, Jr.

[No. 4, Vol. 14, of Torreya, comprising pp. 55–72, was issued 8 April, 1914.]

The accompanying introductory note by Dr. Howe, curator of the Thoreau Museum of Natural History at Concord, Mass., fully explains the basis upon which the classification followed here is made. The writer wishes to here make public acknowledgment of the tireless work of Dr. Howe in completely transposing this entire list from the one system to the other, under most unfavorable circumstances. Thanks are also due him for reading of the proofs of this article.

Using Dr. Howe's transposed list, the writer thought it best to use Tuckerman's nomenclature of families and genera, in so far as they fitted into the new scheme as a basis of procedure. So far as possible this has been done, the equivalent genus and species being placed under the old name following an equality (=) sign. In some cases the Tuckerman genus name has been dropped entirely in the new scheme. In this case, since there is at present no Tuckerman equivalent, the new nomenclature is placed first, with the old equivalent of Tuckerman following. An asterisk (*) before a genus shows where this plan has been followed. Certain new genera indicated in the equivalents have also been inserted in the scheme in their proper and relative places to give a general idea of the new nomenclature as far as represented in this list, and as a sort of cross reference. Such genera are indicated by reference to the old Tuckerman genus, *i. e.*, *Biatorella* (see *Lecanora*).

Foreword

Not since the year 1823 has a single attempt been made to catalogue the lichens growing in the vicinity of New York City. It was in that year that Halsey, supplementary to the list prepared by Torrey in the year 1819, succeeded in compiling a list of some 180 species found or reported to be found within a radius of 30 miles of City Hall, New York City.

Whether it is on account of their lowness in the plant kingdom, or of the difficulties attending their study, it is apparent that a field, wide and rich in innumerable forms, and entirely free from competitors, is open and waiting for one who desires to enlarge and enrich the already existing, but meager and scattered data concerning the lichen flora of this region.

After one and one half years of work, including many thorough examinations of the Lichen Herbarium of the New York Botanical Museum; 30 days spent in the field and much time consumed in the identification of species, a list has been prepared comprising over 300 species taken from an area included within the limits of a circle, the center of which is City Hall, New York City, and the radius of which is 100 miles.

This list is by no means complete. Yet I consider it to be a beginning large enough to justify me in presenting it at this time. It is hoped that many new species, hitherto unknown in this locality, together with many new habitats may subsequently be added.

Boundaries

A circle drawn with its center at City Hall, New York City, and having for its radius a line 100 miles in length, will include the greater part of Long Island; the whole of Staten Island; the greater part of New Jersey; parts of Pennsylvania; New York state as far north as Catskill and more than half of Connecticut.

It has been the custom of the Torrey Botanical Club to include within the 100 mile radius all of Connecticut, all of New Jersey, all of those counties of Pennsylvania which are touched or crossed by the circle, all of Long Island, while the northern boundaries of Green, Delaware, and Columbia counties are taken as the most northern boundaries of the area situated within the borders of New York state.

This list, however, will include no lichens other than those which have been identified as existing strictly within the 100 mile radius.

Ecology

The territory included within the above boundaries is especially well adapted for lichen study. It is perhaps as rich in this flora as any other area of similar size in the United States. District No. 1, including Staten Island, is perhaps most scanty in the lichen flora, while the Hudson region, including District 5, is very rich in all forms.

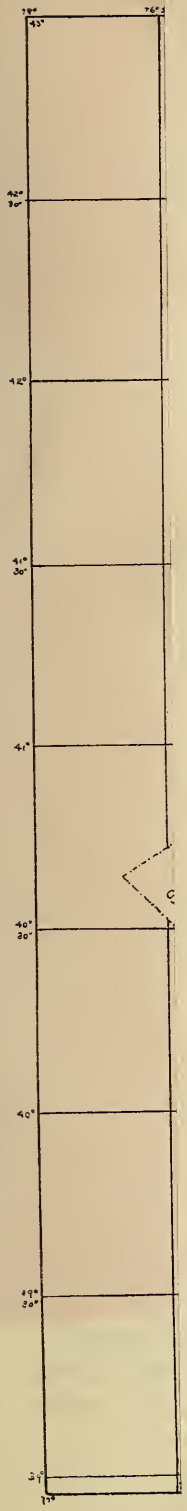
Two leading facts concerning the habitats of lichens make it comparatively easy to determine why they are found in abun-

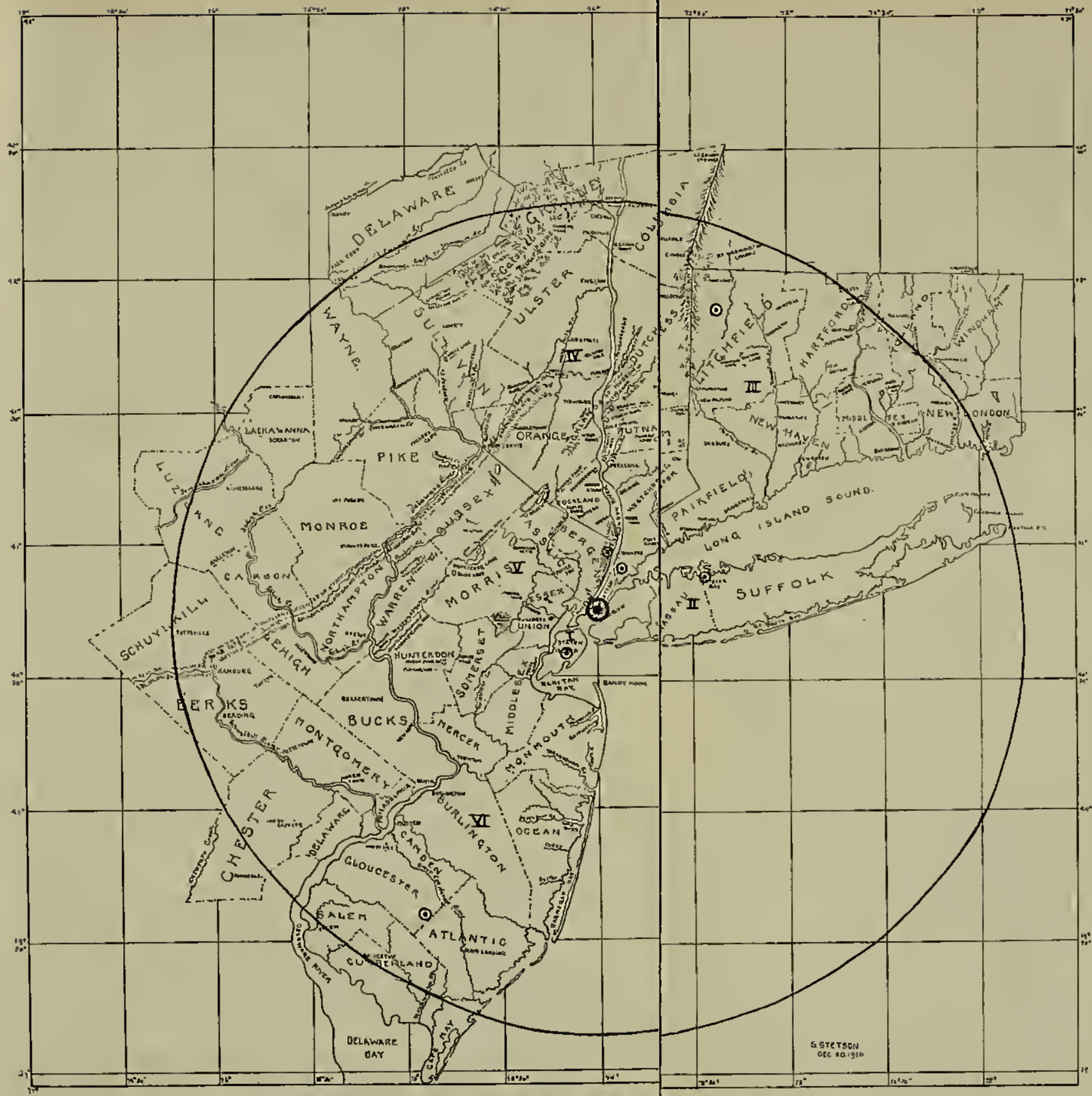
dance in one place, while scanty or entirely absent in another locality. (1) They prefer very moist conditions, and in those conditions are almost invariably found upon trees, deadwood, rails, or mossy earth. (2) They naturally resist dry conditions, but if forced to adapt themselves to such environments are almost invariably found on rocks or less frequently upon sterile earth.

It is thus easy to conclude why Staten Island is so scanty in forms. It is high and dry, and affords exceedingly few streams. If swampy ground occurs, in most cases it is open to the effects of the tides, which being saline, preclude any lichen growth. Long Island produces a fairly good growth, but almost exclusively along its northern shore. This can be explained on the ground that (1) its swamps are, in the majority of cases, covered with fresh water, (2) and the shore is rocky. (3) It is comparatively low. The southern shore, until the extreme eastern end of the island is reached, is devoid of varied forms because (1) it is too low; (2) it is sandy; and (3) its swamps are lagoons having connection with the tides.

The Bronx and Westchester county are high, dry and rocky. Forests are comparatively at a premium. Crustaceous forms are the natural result and observation shows that they are practically the only forms found there. New Jersey, next to the Highland region, shows, perhaps, the most varied flora found within the 100 mile limit. Here are found many altitudes and as regards habitat,—pine barrens, rock deserts, cliffs, swamps and streams. Its forms, then, are many and varied, including the crustaceous, fruticose, and foliaceous.

At least one half of the whole number of species enumerated in this list are found at or near Closter, N. J., a village situated about three and one half miles west of the Palisades and the city of Yonkers, N. Y. This village is literally surrounded with swamps, which are veritable jungles. Here the foliaceous and fruticose forms thrive. A gradual rise toward the Hudson river produces varied crustose forms, while the base of the Palisades affords many foliaceous as well as crustose forms. Southern New Jersey produces a lichen flora comparable to that of Long Island as regards its lack of wide range of species.





Map of the Local Flora Range. Only the area within the circle is covered by this paper.

The Highland region, comprising District 4, shows the greatest possible range. It includes rocky steeps, mountain brooks, torrents, springs and ponds, as well as swampy low ground and abundant forests. The Hudson river itself, with its mighty evaporation of comparatively fresh water, produces an ideal atmospheric condition for the growth of many species. That part of Pennsylvania included within these limits, produces by far more foliaceous than crustose forks, owing to its peculiar atmospheric condition and abundant forests.

It may be fairly concluded, therefore, that no region could afford greater opportunities for the study of lichens, because of its great differences in altitudes, soils, and atmospheric conditions. It consequently follows, that no region of equal area produces at the same time such ideal and such poor conditions; and so many common and varied forms.

Stations

The lichens listed are all found in the area composed of the above six districts, and are arranged in the order of their importance and relationships as originally determined by Tuckerman. The authority, station, habitat, follow. It will be noticed that the station of each district is the one most often mentioned in the list. This because all specimens found within a short radius of the station are named as at that station.

It will be noted (see map) that the entire area included within the 100 mile radius, has been divided into six districts, each having a station, around which all lichens found in that district have been grouped.

District 1.—This district comprises all of the county of Richmond, N. Y., or Staten Island. Richmond, the county seat, is the station.

District 2.—This district comprises all that part of Long Island west of the 100 mile radius. The station is Cold Spring Harbor.

District 3.—This district consists of all that part of the state of Connecticut within the 100 mile radius. The station is Ellsworth.

District 4. This district consists of all that part of New York state, north of City Hall, New York, and within the 100 mile radius. The station is Bronx Park, New York.

District 5.—This district consists of that portion of the state of Pennsylvania within the 100 mile radius and that portion of the state of New Jersey, north of a straight line extending from Perth Amboy southwest to Trenton. The station is Closter.

District 6.—This district consists of all that part of the state of New Jersey south of a straight line extending from Perth Amboy southwest to Trenton and north of the 100 mile radius. The station is Newfield.

Authorities

Tuckerman is held as the authority in compiling this list for various reasons, the most important of which are the following: (1) He was and is our foremost American authority. (2) He was thoroughly conversant with American forms and conditions. (3) His descriptions, though from some standpoints obscure, are much clearer in their application to American lichens than those of European authorities. For purposes of comparison, the specimens in the herbarium of the New York Botanical Garden were accepted as correctly identified, only on such good authority as that of Leighton, Willey, Miss Clara Cummings, and Bruce Fink.

All recent and accepted changes in nomenclature occurring since the death of Tuckerman are included. Several genera (*Acolium*, *Graphis*, *Calicium*, etc.) have been identified under other authorities, principally Nylander and Fries.

Abbreviations

In preparing a list of this length, many repetitions necessarily occur, as regards stations, habitat, and authority. Consequently, after their first insertion, such are abbreviated.

I. Order: GYMNOCARPI (Schrad.) Fr.

= GYMNOCARPALES (Luyken) Fr.

Sub-order: *CYCLOCARPINEAE* (Wain).

1. Group: Radiatae Hue

Family 1. **Usneei** = **Usneaceae** Eschew.

Genus 1. *Usnea barbata* (L.) Fr. Closter, N. J. *Common.* trees.
= composite material.

	U. longissima Ach.	Ocean, N. J.	t.
	U. angulata Ach.	Palisades, N. J.; C.	t.
	U. barbata ceratina Schaer. = *plicata* (L.) Web.	Atco, N. J., May's Landing, Closter, N. J.	t.
	U. barbata plicata Fr. = *plicata* var. *Huei* (Borst.) Howe.	Camden, N. J.; C.	t.
	U. barbata dasypaoga Fr. = *barbata* (L.) Web.	Camden, N. J.; C.	t.
	U. barbata florida Fr. = *florida* (L.) Web.	Camden, N. J.; C, C	t.
	U. barbata hirta Fr. = *florida* f. *hirta* (L.) Ach.	C.	t.
	U. barbata rubiginea Michx. = *florida* f. *rubiginea* Michx.	Phila., Pa.; C.	t.
	U. trichodea Ach.	Otter Pond, N. J., Young; Orient, L. I.	t.
Genus 2.	*Evernia furfuracea* (L.) Mann. = *Parmelia furfuracea* (L.) Ach.	C.; Catskill, N. Y.	t.
	E. furfuracea Cladonia Tuck. = *Parmelia furfuracea* var. *Cladonia* (Tuck.) Howe.	C.	t.
	E. prunastri (L.) Ach. = *Letharia thamnodes* (Flot) Hue.	Cat.; Ellsworth, Conn.	t. and fences.
Genus 3.	*Ramalina calicaris* (L.) Fr. = composite.	C.; Summit Mt., N. Y.; Peach Bottom, Pa. *Common.*	t. and rocks
	R. calicaris canaliculata Fr. = *canaliculata* (Fr.) Herre.	C.; Summit Mt., N. J.	t.
	R. calicaris farinacea Schaer. = *farinacea* (L.) Ach.	C.	t.
	R. calicaris fastigata Fr. = *fastigiata* (Per.) Ach. emend.	C.	t.
	R. calicaris fraxinea Fr. = *fastigata* var. *subampliata* (Nyl.) Howe.	Phila.	t.
	R. rigida (Ach.) Pers. = *Urlleyi* Howe.	N. Y. City; Atco, N. J.; Camden, N. J.	t.
Genus 4.	*Alectoria jubata* (L.) Ach. = composite	C.	t.
	A. jubata implexa Fr. = *jubata* var. *implexa* (Hoffm.) Fr.	C.	earth.

	A. jubata chalybeiformis Ach. = *chalybeiformis* (L.) S. F. Gray.	C.; Jamaica, L. I.	earth and firs.
	A. jubata bicolor Fr. = *bicolor* (Ehrh.) Nyl.	Susquehanna, Pa.	earth.
	A. ochroleuca (Ehrh.) Nyl.	Susquehanna, Pa.	e.
Genus 5.	*Telochistes chrysopthalmus* (L.) Norm.	C. Greenpoint, L. I.; Phila.; Vineland; Cam., N. J. *Common.*	r.

2. Group: RADIATI-STRATOSI Hue

Family 1. **Cladoniei = Cladoniaceae**

Genus 1.	*Stereocaulon denudatum* Floerk.	C.; Pal.	rocks.
	S. paschale (L.) Ach.	Pal.; Sus.	e., r.
	S. tomentosum Fr.	C.	e.
Genus 2.	*Cladonia rangiferina alpestris* L. = *alpestris* (L.) Rabenh.	C.; Ja.	logs.
	C. rangiferina sylvatica L. = *sylvatica* Hoffm.	C.; Staten Id.; Ells.	e.
	C. papillaria (Ehrh.) Hoffm.	C.; Cat.; Pt. Jefferson, N. Y.	gravelly earth
	C. macilenta Hoffm. (Ehrh.)	C.; Pal.; Ja.; Ells. *Common.*	logs.
	C. cornucopioides (L.) Fr. = *coccifera* (L.) Willd.	C.; Phila.; Richmond Hill, L. I.; Pal.; Ells.	e.
	C. coccifera (Schaer.) Spic.	C.	stumps, e.
	C. bellidiflora (Ach.) Schaer.	Princess Bay, St. Id.	e.
	C. cristatella Tuck.	Rich. Hill, Phila.; Todt Hill, St. Id.; Richmond, St. Id.; Princess Bay, St. Id. *Common.*	e., t.
	C. lepidata Fr. = *C. cristatella* var. *ochrocarpia* Tuck.	C.	e.
	C. uncialis (L.) Web.	C.; Rich.; Ridgewood; Bridgeton, N. J.	e.
	C. uncialis adunca Ach. = *uncialis* (L.) Web.	C.	e.
	C. furcata (Huds.) Schaer.	Ja.; C.	e.
	C. fimbriata adspersa Tuck. = *C. furcata* var. *scabriuscula* (Del.) Coem.	C.	e.
	C. furcata racemosa (Hoffm.) Fl.	C.; N. Y. C.; Ells.	e.
	C. furcata subulata Fl. = *v. palamaea* (Ach.) Nyl.	C.; Pal.; Pt. Jeff.	e.

	C. furcata crispata Fl.	C.	e.
	= *crispata* (Ach.) Flot.	C.	e.
	C. squamosa (Scop.) Hoffm.	C.; Flushing, L. I.	decayed logs.
	C. Botryella Nyl. =?	N. Y. C.	e.
	C. caespiticia (Pers.) Fl.	Tarrytown, N. Y.; Ja.	e.
	C. squamosa delicata Fr. = *delicata* (Ehrh.) Fik.	C.	wood.
	C. turgida (Ehrh.) Hoffm.	C.	e.
	C. mitrula Tuck.	C.; Pal.; N. Y. C.; Greenwood Cem., Bklyn. *Common.*	e.
	C. gracilis symphiacarpa Tuck. = *subcariosa* Nyl.	C.	e.
	C. cariosa (Ach.) Spreng.	C.; P. Jervis, N. Y.; N. Y. City; Todt H. *Common.*	e.
	C. pyxidata symphicarpia Nyl. = *alpicola* var. *Karelica* Wain.	C.; Cat.; Ells.	e.
	C. decortica (Floerk.) Spreng.	Ja.	e.
	C. gracilis elongata (Jacq.) Flk.	C.	e.
	C. gracilis hybrida Schaer. = var. *chordalis* (Floerk.).	C.; Cats.	r., logs.
	C. cornuta (L.) Schaer.	C.	e.
	C. degenerans (Floerk.) Spreng.	C.	e.
	C. verticillata evoluta Fr.	Ja.	e.
	C. gracilis verticillata Fr. = *verticillata* Hoffm.	C.; Ells.	e.
	C. pyxidata (L.) Fr.	C.; Oyster Bay, L. I.; St. Id.; Safe Harbor, St. Id.; Phila.; Fa[1]., *common.*	e.
	C. fimbriata (L.) Fr.	C.; Ja.; Rich.; Pal.	e., logs.
	C. fimbriata tubaeformis Fr. = var. *simplex* (Weis.) Flot.	Ja.	e.
Genus 3.	*Baeomyces aeruginosus* (Scop.). DC. = *Icmadophila ericetorum* (L.) Zahlbr.	C.; Summit Lake, N. J.	decaying wood.
	B. byssoides (L.) Schaer.	N. Y. C.	decaying wood
	B. roseus Pers.	C.; Todt. H.; Valley Stream, L. I.; Lawrence, L. I. *Common.*	e.
	B. icmadophilus Nyl. = *Icmadophila ericetorum* (L.) Zahlbr.	St. Id.; Shelbourne, N. Y.	e.

3. Group: STRATOSAE Hue.

Family 1. **Pseudophyciaceae**

*Genus 1.	*Pseudophyscia comosa* (Eschw.) Nyl. = *Anaptychia comosa* (Eschw.) Mass.	Cam.	t.
	P. aquila (Ach.) Hue = *Physcia aquila* (Ach.) Nyl.	New Lots, L. I.	t., r.
	P. aquila var. *detonsa* Tuck. = *Physcia aquila detonsa* Tuck.	Pal.; C.	t., r.
	P. aquila detonsa (Tuck.). = *Physcia detonsa* Fr.	Pal.	t.
	P. speciosa (Wulf.) Müll. = *Physcia speciosa* (Wulf.) (Ach.) Nyl.	C.; Pal.	t., r.
	P. speciosa var. *galactophylla* Tuck. = *Physcia speciosa galactophylla* (Tuck.).	C.	t., r.
	P. hypoleuca (Muhl.) Hue. = *Physcia hypoleuca* (Muhl.) Tuck.	C.; Cam.; Atco; Flushing, L. I.	t.

Family 2. **Physciaceae**

Genus 1.	*Physcia hispida* (Schreb.) Fr. = *tenella* (Scop.) Nyl.	C.	t., r.
	P. tribacea (Ach.) Tuck.	R. Hill.; C., common.	t.
	P. stellaris (L.) Nyl.	St. Id.; C.; Pal. Common.	t.
	P. pulverulenta (Hoffm.) Nyl.	Cam.; Cat.; C.; Atco.	t., e.
	P. obscura (Ehrh.) Th. Fr.	C.; Cam.; Rich.; Cold Spring Harbor, L. I.	r.
	P. obscura endochrysea Nyl. = var. *endococcina* (Koeb.) Th. Fr.	C., Cam.	t.
	P. adglutinata (Floerk.) Nyl.	C.	t.
Genus 2.	*Pyxine cocoes* (Sw.) Nyl.	C.; Pal.; Cen. Park, N. Y.; Cam.	t.
	P. sorediata (Ach.) Fr.	C.	t., r.
Genus 3.	*Xanthoria parietina* (L.) Th. Fr. = *Telochistes parietinus* (L.) Norm.	Flatbush; Flushing; C.; Ridgewood, L. I.	t.
	X. lychnea (Ach.) Th. Fr. = *Telochistes lychneus* Nyl.	St. Id.; C.; Flatbush, N. Y.	t.
	X. polycarpa (Hoffm.) Th. Fr. = *Telochistes polycarpus* (Ehrh.) Tuck.	C.; Cam.	t.

Family 3. Buelliaceae

Genus 1.	*Buellia stellulata* (Tayl.) Mudd.	C.	r.
	B. spuria (Schaer) Korb.	C.	t.
	B. dialyta (Nyl.) Tuck.	C.	pine.
	B. parasema (Ach.) Koerb. = *Lecidea parasema* Ach.	C.	t.
	B. myriocarpa (Ach.) Mudd. = *Buellia myriocarpa* (D. C.) Mudd.	C.	t., d. w.
	B. Schraerei De Not	C.	d. w.
	B. petraea (Flot. and Koerb.) Tuck. = *Rhizocarpon petraea* (Wulf.) Mass.	C.; Sus.	d. w.
	B. petraea Montagnei Tuck.	C.; Sus.	r., d. w.
	B. Elizae Tuck.	New Bedford, Ct.	t.
	B. lactea Mass. = *Polyblastea lactea* (Mass.) Korb.	C.; Pal.	t.
	B. pullata Tuck.	Pt. Jeff.	r.
	B. vernicorna Tuck.	C.	r.
Genus 2.	*Rinodina constans* Nyl. = *Maronea constans* Zw.	C.	t.
	R. Ascociscana Tuck.	Sus.	t., r.
	R. sophodes (Ach.) Th. Fr.	C.	t., r.
	R. sophodes confragosa Nyl. = *R. confragosa* (Ach.) Koerb.	C.	r., fence.

Family 4. Caloplacaceae

*Genus 1.	*Blastema ferrugineum* (Huds.) Arn. = *Placodium ferrugineum* (Huds.) Hepp.	C.	t., d. w.
	B. ferrugineum nigrescens (Tuck.) = *P. ferrugineum nigrescens* (Tuck.) Fr.	C.	t., d. w.
	B. rupestris (Scop) Zahlbr. = *P. rupestre* (Scop.) Br. and Rostr.	N. Y. C.	r.
*Genus 2.	*Caloplaca aurantiaca* (Lightf.) Th. Fr. = *Placodium aurantiacum* (Lightf.) Naeg. and Hepp.	C.; Rich.	d. w.
	P. cerinum (Ehrh.) Zahlbr.	C. *Common.*	t.

	C. aurantiaca erytheilum (Ach.). = *P. aurantiacum erythellum* Ach.	C.	t.
	C. cinnabarina (Ach.) Zahlbr. = *P. cinnabarinum* (Ach.) Anz.	C.; Ft. Wadsworth, St. Id.	r.

Family 5. **Parmeliaceae**

*Genus 1.	*Platysma glaucum* (L.) Nyl. = *Cetraria glauca* (L). Ach.	Bergen Co.	r.
	P. lacunosum var. *Atlanticum* (Tuck.) Nyl. = *C. lacunosa* Ach.	C.; Ja.; Cold Spring Harbor, L. I.	t.
	P. aurescens (Tuck.) Nyl. = *C. aurescens* Tuck.	Passaic, N. J.; C.; C. S. H.	t.
	P. lepatizon (Ach.) Wain. = *C. Fahlunensis* (L.) Schaer.	C.; Del. Water Gap, Pa.	r.
	P. juniperina (L.) Nyl. = *C. juniperina* (L.) Ach.	C.	t., w.
	P. juniperina var. *Pinastri* (Ach.) Nyl. = *C. juniperina Pinastri* Ach.	Bergen Co.	t.
	P. Fendleri (Tuck.) Nyl. = *C. Fendleri* Tuck.	C.; Cam.; Atlantic, N. J.	d. w.
	P. Oakesianum (Tuck.) Nyl. = *C. Oakesiana* Tuck.	Cat.	t., r.
	P. Islandica (L.) Ach. = *C. Islandica* (L.) Nyl.	Ulster Co., N. Y.; Rich. Hill, Del. Water Gap. *Common.*	t.
*Genus 2.	*Nephromopsis ciliaris* (Ach.) Hue. = *C. ciliaris* Ach.	C.; East N. Y.; Brainerd, Ct. *Common.*	fences.
*Genus 3.	*Anzia colpodes* (Michx.) Stizb. = *Parmelia colpodes* (Ach.) Nyl.	At., Bergen Co. *Common.*	t.
Genus 4.	*Parmelia caesia* Fr. = *Physica caesia* (Hoffm.) Nyl.	C.	r.
	P. crinita Ach.	C.; Ridg.; Ber. Co.	r.
	P. cetrata Ach. =?	At.	t., r.
	P. laevigata (Sm.) Nyl. =?	Ocean, N. J.; Monmouth, N. J.	t., r.
	P. pertusa (Schrank) Schaer. (Ach.) Nyl.	Ber. Co.; Oc.	t., r.

	P. olivacea (L.) Ach.	C., Cam.	t., d. w.
	P. Borreri Turn.	C.; Bra.; St. Id.; Gowanus; Flatlands, Glen Cove, L. I. *Common.*	t., d. w.
	P. Borreri rudecta Tuck.	C.; St. Id.	t., d. w.
	P. caperata (L.) Ach.	C.; Pal. *Common.*	t., d. w.
	P. conspersa (Ehrh.) Ach.	C.; St. Id.; Prospect Pk., B'klyn; Ridg.; Paterson, N. J. *Common.*	r.
	P. saxitalis (L.) Fr.	C.; Ridg.; Bra.; Val.; St.	t., d. w., r.
	P. saxitalis sulcata (Tayl.) Nyl.	C. S. H.	t.
	P. tiliacea (Hoffm.) Flk.	C.; Val. St. *Common.*	t., r.
	P. perforata (Jacq.) Ach.	C.; Rich.; Ridg.; Giffords, St. Id.	t.
	P. perlata (L.) Ach. = *olivaria* (Ach.) Hue	C.; C. S. H.; Ridg.; Val. St.	t.
	P. physodes (L.) Ach.	At.; C.	t.
	P. centrifuga (L.) Ach.	N. Y. C.; C.	t.
*Genus 5.	*Parmeliopsis aleurites* (Ach.) Nyl. = *Cetraria aleurites* (Ach.) Th. Fr. and *Parmelia aleurites* Nyl.	C.	d. w.
	P. placorodia Nyl. = *C. placorodia* Nyl.	Oc.; Monmouth, N. J.	d. w.
	P. ambigua (Wulf.) Ach. = *Parmeliopsis ambigua*	C.; Valley Stream, L. I.	t., r.
*Genus 6.	*Candelaria concolor* (Dicks.) Arn. = *Telochistes concolor* (Dicks.).	C.; Cam.; Rich.; St. Id.	t.

Family 6. **Lecanoraceae**

*Genus 1.	*Candelariella vitellinum* (Ehrh.) Muhl. Arg. = *Placodium vitellinum* (Ehrh.) Naeg. and Hepp.	Rich.; Bay Ridge, L. I.	r.
*Genus 2.	*Icmadophila ericetorum* (L.) Zahlbr. = *Baeomyces aeruginosus* (Scop.) D. C.	C.; Sum. Lake; N. J.	d. w.
	I. ericetorum Nyl. (Zahlbr.) = *B. icmadophilus* Nyl.	St. Id.; Shelbourne, N. Y.	e.
Genus 3.	*Lecanora fuscata* (Schrad.) Th. Fr. = *Acarospora fuscata* (Schrad.) Arn.	Chester, N. J.	r.

L. tartarea (L.) Ach. = *Ochrolechia tartarea* (L.) Mass.	C.; Ells.; Pal.	e., r.
L. varia (Ehrh.) Nyl.	C.; Ridg.; Glen Cove, L. I.	t., r.
L. varia saepincola Fr.	C.; Ridg.	t., r.
L. atra (Huds.) Ach.	Poestenkill, N. J.	r.
L. Bockii (Fr.) Th. Fr. = *L. gibbosa* (Ach.).	C.; Pal.	r.
L. muralis (Schreb.) Tuck.	C.	r.
L. xanthophana Nyl.	C.; Pal.	r.
L. pallescens (L.) Schaer. = *Ochrolechia pallescens* (L.) Mass.	C.; Pal.	t., d. w.
L. pallida (Schreb.) Schaer.	C.; Ridg.; Flat.; Val. St.	t.
L. rubina (Vill.) Wain.	Haverstraw, N. Y.; Sus.	r.
L. subfusca (L.) Ach.	At.; Val. St.; Rich. Hill.	t., r., d. w.
L. pallida cancriformis Tuck. = *L. albella* v. *cancriformis* (Tuck.) Herre.	C.	tr., rails.
L. allophana Nyl.	C.; Rich. Hill.	t.
L. subfusca distans (Ach.) Nyl.	C.	t., r.
L. Hageni Ach.	C.	t., r.
L. Willeyi Tuck.	C.	i., fences.
L. Cupressi Tuck.	C.	t.
L. orosthea (Sw.) = *Lecanora symmicta* Nyl.	C.	t.
L. athroocarpa (Dub.) Nyl. = *Lecidea athroocarpa* Ach.	C.	t.
L. cinerea Ach.	C.; Cat.	sandstone.
L. lacustris (With.) Nyl.	C.	r. under water
L. cervina (Pers.) Nyl. = *Acarospora chlorophana* (Walbg.) Mass. or = *A. squamulosa* (Schrad.) Th. Fr.	C.	r.
L. cervina discreta Nyl. = *A. discreta* (Ach.) Th. Fr.	C.	r.
L. privigna Nyl. = *Biatorella simplex* (Dav.) Br. and Rostr.	C.	r.

Family 7. **Pertusariaceae**

Genus 1. *Pertusaria multipuncta* (Turn.) Nyl.	C.	t.
P. globularis Ach.	C.; Cat.	t., r.

	P. velata (Turn.) Nyl.	C.; Ridg.	t., r.
	P. communis DC.	C.; St. Id.; Ridg.	t., r.
	P. leioplaca (Ach.) Schaer.	C.	t., r.
	P. pustulata Duby.	C.; Ja.; Flu.	t.
	P. glomerata (Schleich.) Schaer.	Ja.	e.
	P. Wulfenii (DC.) Fr.	Cat.	e.

Family 8. **Acarosporaceae**

Genus 1. *Biatorella* (see *Lecanora*).
Genus 2. *Acarospora* (see *Lecanora*).

Family 9. **Stictaceae**

Genus 1.	*Sticta crocata* (L.) Ach.	C.	r. in mosses.
	S. quercizans (Michx.) Ach. = *Lobaria quercizans* Michx.	C.; Pal.; Sus.	r., t.
	S. pulmonaria (L.) Ach. = *Lobaria pulmonaria* (L.) Hoffm.	C.; Pal. Common.	r., t.
	S. amplissima (Scop.) Mass. = *Lobaria amplissima* (Scop.) Arn.	Pal.; N. Lots, N. Y. C.; Newfield, N. J.; Matamoras, Pa.; Safe Harbor, Pa. *Common.*	r., t.
	S. aurata (Sm.) Ach.	Gloucester, N. J.	t., r.
	S. sylvatica (Huds.) S. F. Gray.	Cat.	t., r.
Genus 2.	*Lobaria* (see *Sticta*).		

Family 10. **Peltigeraceae**

Genus 1.	*Peltigera venosa* (L.) Hoffm.	C.	e.
	P. canina (L.) Hoffm.	C.; Pal.; Ja.; Bra.	e.
	P. canina spuria Ach. = *P. spuria* (Ach.) DC.	C., Glou.; Old Fields, N. J.	e., r.
	P. apthosa (L.) Hoffm.	C.; Phila.; Bra.; Peekskill; Fishkill.	e., r.
	P. horizontalis (L.) Hoffm.	C.; Pal.	e., r.
	P. polydactyla (Neck.) Hoffm.	C.; Sus.	e., r.
	P. rufescens (Sw.) Hoffm.	C.; Newf.; Glou., N. J.	e., r.
Genus 2.	*Nephroma tomentosum* (Hoffm.) Koerb.	C.	t., r.
	N. Helveticum Ach.	C.; Cat.	t., r.
	N. laevigatum Ach.	C.; Cam.; At.	t., r.

Family 11. **Pannariaceae**

Genus 1.	*Pannaria tryptophylla* (Ach.) Mass. = *Parmeliella tryptophylla* Müll. Arg.	Newf.	t., r.
	P. molybdaea (Pers.) Tuck. = *Collema molybdium*	Newf.; C.; Salem; Hackensack, N. J.	t., r.

	P. molybdaea cronia Nyl. = *Collema molybdium* var. *cronia* (Nyl.).	Sus.	t., r.
	P. languinosa (Ach.) Koerb.	C.; Pal.	e.
	P. byssina (Hoffm.) Tuck. = *Dichodium byssinum* (Ach.) Nyl.	C.; Cam.; Hack.	e.
	P. nigra (Huds.) Nyl. = *Placythium nigrum* (Huds.) S. Gray.	C.; Hack.	r.
	P. rubiginosa (Thunb.) Delis.	Newf.; Ulster Co., N. Y.; Shadaken, Pa.	t.
	P. leucosticta Tuck.	C.; Newf.; Weehawken, N. J.	t., r.
	P. microphylla (Sw.) Delis.	C.	t., r.
	P. lurida (Mont.) Nyl. = *Physma lurida* Mont.	C.; Pal.; Cam.; At.; N. Y. C.; Newf.	e., d. w.
Genus 2.	*Hydotheria venosa* Russ.	C. V. under water.	
Genus 3.	*Parmeliella* (see *Pannaria*).		
Genus 4.	*Placyrthium* (see *Pannaria*).		

Family 12. Gyrophoraceae

Genus 1.	*Gyrophora* (see *Umbilicaria*).		
Genus 2.	*Umbilicaria vellea* (L.) Nyl. = *Gyrophora vellea* (L.) Ach.	C.	r.
	U. Dilleni Tuck. = *G. Dilleni* (Tuck.) Mühl. Arg.	Sus.	r.
	U. Muhlenbergii (Ach.) Tuck. = *G. Muhlenbergii* (Ach.) Schneid.	C.; Sus.	r.
	U. papulosa Tuck. = *U. pustulata papulosa* Tuck.	Rockland Co.	r.
	U. pustulata (L.) Hoffm.	Garrison's; Washington Heights, N. Y. C.; Morris Pond, N. J.	r.
	U. Pennsylvanica Hoffm.	Sus.; Mat.; Pa.	r.
	U. hirsuta (Ach.) Stenh. = *G. hirsuta* (L.) Ach.	Cat.	r.

Family 13. Lecidiaceae

Genus 1.	*Lecidea contigua* Fr.	C.; St. Id.; Ja. *Common.*	r.
	L. enteroleuca Ach.	C.; Cat.	r.
	L. granosa Tuck. = *Toninia granosa* (Tuck.).	C.	r., bricks.
	L. tessellina Tuck.	C.	r.

	L. albocoerulescens (Wulf.) Schaer.	R. Hill, West Graham, Ct.	r.
	L. muscorum Koerb. = *Bacidia muscorum* (Ach.) Mudd.	C.	r.
	L. alba (Schl.) Nyl. = ?	St. Id.	r.
	L. elaeochroma Tuck. = *Lecidea parasema* v. *elaeochroma* (Tayl.) Ach.	C.	r.
	L. spilota Fr. = *Lecidea tessellata* Fek.	C.	r.
	L. lutea Schaer. = *Biatorina lutea* (Dicks.) Arn.	Newf.	r.
Genus 2.	*Psora* (see *Biatora*).		
Genus 3.	*Catillaria* (see *Biatora*).		
Genus 4.	*Biatorina* (see *Biatora*).		
Genus 5.	*Biatora anthracophila* Nyl. = *Lecidea anthracophila* Nyl.	C.	pine wood.
	B. campestris Fr. = *Biatorella campestris* (Fr.) Th. Fr.	C.; Pal.	e.
	B. chlorantha Tuck. = *Bacidia chlorantha* (Tuck.) Fink.	Cat.	pine wood.
	B. chlorosticta Tuck. = *Bacidia chlorosticta* (Tuck.).	C.	cedar bark.
	B. cuprea (Sommerf.) Fr. = *Lecidea cuprea* Sommerf.	Pine Is.; N. Y.	cedar bark.
	B. geophana Nyl.	C.	e.
	B. granulosa (Ehrh.) Poetsch. = *Lecidea granulosa* (Ehrh.) Schaer.	Todt Hill, St. Id.	sand.
	B. cupreo-rosella Nyl. = *Bilimbia cupria* Mass.	Orange Co., N. Y.	r.
	B. exigua (Schrad.) Ach. = *Rinodina exigua* (Ach.) Th. Fr.	C.	r.
	B. hypnophila Turn. = *Bilimbia hypnophila* (Ach.) Th. Fr.	C.	r., d. w.
	B. icteria Mont. = *Psora icteria* (Mont.) Fink.	C.; Pal.	e.

B. mixta Fr. = *Biatorina mixta* (With.) Fink.	Pal.	t.
B. parvifolia (Pers.) Tuck. = *Lecidea parvifolia* (Pers.) Nyl.	C.	t.
B. rubella Fr. = *Bacidia rubella* (Hoffm.) Mass.	C.; Pal.; Newf.	
B. Russellii Tuck. = *Psora Russellii* (Tuck.) Fink.	C.; Sus.	r., e.
B. Resinae Fr. = *Biatorella resinae* (Fr.) Th. Fr.	C.	white pine.
B. rufo-nigra Tuck. = *Lecidea rufo-nigra* (Tuck.) Hasse.	Pal.	r.
B. russula (Ach.). = *Biatorina russula* Ach.	C.	t.
B. sanguineo-atra (Fr.) Tuck. = *Bacidia atrasanguineo* (Schaer.) Th. Fr.	C.	e.
B. suffusa Fr. = *Bacidia fuscorubella* v. *suffusa* (Fr.) Fink.	C.	t.
B. uliginosa (Schrad.) Ach. = *Lecidea uliginosa* (Schrad.) Ach.	C.	rotting log; e.
B. umbrina Ach. = *Bacidia umbrina* (Ach.) Br. et Rostr.	C.	r., rails.
B. varians Ach. = *Lecidea varians* Ach.	C.; common.	t., d. w.
B. vernalis (L.) Fr. = *Lecidea vernalis* (L.) Ach.	C., Cat.	t.
B. viridescens (Schrad.) Fr. = *Lecidea viridescens* (Schrad.) Ach.	C.	rotting wood.
B. Schweinitzii Fr. = *Bacidia Schweinitzii* (Tuck.) Fink.	C.; Newf.	rotting wood.
B. inundata Fr. = *Bacidia inundata* (Fr.) Koerb.	C.	rotting wood.
B. fossarum (Duff.) Mont. = *Biatorella fossarum* (Duff.) Th. Fr.	C.	t.

	B. nigra Tuck. = ?	C.	t.
	B. decolorans (Hoffm.) Fr. = *Lecidea decolorans* (Hoffm.) Schaer.	C.	t.
	B. tricolor With. = *catillaria tricolor* (With). Th. Fr.	C.	t.
	B. denigrata Fr. = *Biatorina synothea* (Ach.) Koerb.	C.	t.
	B. fusco-rubella Hoffm. = *Bacidia fusco-rubella* (Hoffm.) Arn.	C.	t.
Genus 6.	*Bacidia* (see *Biatora*).		
Genus 7.	*Bilimbia* (see *Biatora*).		
Genus 8.	*Toninia* (see *Biatora*).		
Genus 9.	*Rhizocarpon* (see *Buellia*).		
*Genus 10.	*Lopadium vulpinum* (Tuck.). = *Heterothecium vulpinum* Tuck.	Atlantic Co., N. J.	t.
	L. pezizoideum (Ach.) Koerb. = *H. pezizoideum* (Ach.) Flot.	C.	fir bark.

Family 14. **Diptochistaceae**

*Genus 1.	*Conotrema urceolatum* (Ach.) Tuck. = *Gyrostomum urceolatum* Fr.	C.; Val. St.	t.
*Genus 2.	*Diplochistes scruposus* (L.) Norm. = *Urceolaria scruposa* (L.) Nyl.	C.	e., r.

Family 15. **Graphidaceae**

Genus 1.	*Graphis scripta* (L.) Ach.	C.; N. Y. C.; Rich.; Giffords, St. Id.; Conewago, Pa. *Common.*	d. w.
	G. scripta graciliens Nyl.	C. S. Harbor.	d. w.
	G. scripta f. recta Nyl.	C.; Pal.; St. Id.	d. w.
	G. scripta assimilis Nyl.	C.	d. w.
	G. erumpens Nyl.	Giff.	d. w.
	G. elegans (Sm.) Ach.	C.	d. w.
	G. dendritica Ach. = *Phaeographis dendritica* (Ach.) Müll. Arg.	C.; Pal.	d. w.
	G. sculpturata Ach.	C.	d. w.

Genus 2.	*Phaeographis* (see *Graphis*).		
Genus 3.	*Opegrapha varia* Pers.	C. Newf.; St. Id.; Rich. Hill, L. I.	t.
	O. varia rimalis Fr.	C.	t.
	O. vulgata Ach.	C.	t.
	O. viridis Pers.	C.	t.
Genus 4.	*Xylographa parallela* (Ach.) Fr.	Lakewood, N. J.	d. w.

Family 16. **Arthoniaceae**

Genus 1.	*Arthothelium* (see *Arthonia*).		
Genus 2.	*Arthonia glaucescens* Nyl.	C.; Newf.	t.
	A. lecidella Nyl.	C.	t.
	A. astroidea Ach. = *Arthonia radiata* Ach.	C., Ells.	t.
	A. spectabilis Ach. = *Arthothelium spectabile* Mass.	N. Y. C.	t.
	A. punctiformis Ach.	N. Y. C.	t.
	A. glebosa Tuck.	C.	t.

4. Group: Collemae Hill.

Family 1. **Collemaceae**

Genus 1.	*Collema microphyllum* Ach. = *Leptogium microphyllum* (Ach.) Zahlbr.	C.	t.
	C. tenax (Sw.) Ach.	C.	e., r.
	C. furvum Ach.	C.	r.
	C. myriococcum (Ach.) Arn.	C.; Limestone, N. Y.	r.
	C. pycnocarpum Nyl. = *Synechoblastus pycnocarpum* (Nyl.) Fink.	C.; Pal.	t.
	C. verruciforme Nyl.	C.; Pal.	t.
	C. cyrtaspis Tuck. = *Synechoblastus cyrtaspis* (Tuck.) Fink.	C.	t.
	C. leptaleum Tuck.	C.	t.
	C. floccidum Ach. = *Synechoblastus flaccidus* (Ach.) Trev.	C.; Ja.; Val. St.	r.
	C. nigrescens (Leers) Wain.	C.	t.
	C. nigrescens leucopepla Tuck. = *C. vespertilio* (Lightf.) Wain.	Bats. to N. J.	t.
	C. ryssoleum Tuck. = *Synechoblastus ryssoleus* (Tuck.) Fink.	C.; Pal.	r.
	C. pulposum (Bernh.) Nyl.	C.; Pal.	e.

	C. plicatile Schaer. = *Leptogium plicatile* (Ach.) Nyl.	Ulster Co., N. Y.	e.
Genus 2.	*Leptogium bolacinum* Stizenb. = *Dentriscocaulon bolacinum* Nyl.	C.	r.
	L. tremelloides (L. fil.) Wain.	C.; Bra.; Cat.; Ja.	r.
	L. myccochorum saturinun Schaer.	C.	e.
	L. palmatum (Huds.) Mont.	C.	e.
	L. chloromelum (Sm.) Nyl.	C.; Pal.	t., r.
	L. dactyinum Tuck.	Pal.; Poughkeepsie, N. Y.	r.
	L. lacerum (Sm.) Fr. = *L. scotinum* (Ach.) Fr.	C.; Pal.	r.
	L. pulchellum (Ach.) Nyl.	C.	t., r.
	L. saturinum (Dicks.) Nyl.	C.	t.
	L. tenuissimum (Sm.) Koerb.	C.	sand.
Genus 3.	*Synechoblastus* (see *Collema*).		
Genus 4.	*Dendriscocaulon* (see *Leptogium*).		

Family 2. **Heppiaceae**

Genus 1.	*Heppia Despreauxii* (Mont.) Tuck. = *H. virescens* (Despr.) Nyl.	Cam.	e.

Family 3. **Lichinaceae**

Genus 1.	*Lichina confinis* Ag.	Pal.	r.

Family 4. **Pyrenopsidaceae**

Genus 1.	*Pyrenopsis Schroederi* (Mass.) Nyl. = *Psorotichia Schaereri* (Mass.) Arn.	Sus.	r.

Family 5. **Ephebaceae**

Genus 1.	*Ephebe pubescens* Fr. = *E. lanata* (L.) Wain.	C.; Sus.	r.

Sub-order: *CONIOCARPINEAE* Meyer.

Family 1. **Caliciaceae**

Genus 1.	*Chaenotheca* (see *Calicium*).		
Genus 2.	*Stenocybe* (see *Calicium*).		
Genus 3.	*Calicium tigillare* (Fee) DC. = *Cyphelium tigillare* Th. Fr.	C.; At.	t.
	C. byssacaum Fr. = *Stenocybe byssacaum* (Fr.) Nyl.	C.	t.